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TREATMENT OF ABDOMINAL COMPARTMENT SYNDROME

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Aim

To develop a device with ultraviolet - and electroradiation for the purpose of intestine sanitation and its electrical stimulation in patients with acute abdominal pathology in cases of abdominal compartment syndrome

Methods

As a guide for electroconducted radiation we use the probe inserted during surgery for drainage of the intestine. For this purpose we invented a device to apply rectangular pulses of 50Hz, with a current of 10mA. For sanitation, the intestine was exposed to ultraviolet LED with a wavelength of 255nm. Electrical stimulation and sanitation of the bowels (with replacement content lactobacilli) was performed after the first postoperative day, with the session lasting 8-10min at a frequency of once every 6-12 hours for 2-4 days. Wave effects on the intestine while eliminating intestinal obstruction were clinical signs assessed.

Results

Compulsory component treatment program abdominal compartment syndrome is a complex correction endogenous deficiency syndrome that includes intraoperative bowel decompression, enteral lavage, intestinal decontamination, enterosorption, enteral dialysis, electrical and early tube nutrition. The healthy proximal part of the small intestine contains up to 105 bacteria in 1mL of intestinal contents (the ratio of aerobic and anaerobic bacteria – 10/1) and terminal ileum - 103-109 bacteria in 1mL. Patients with acute abdominal pathologies have a disturbed ratio towards the replacement of putrid microflora involving spore-forming bacteria of the genus Bacillus, Clostridium, Enterobacteriaceae (Proteus, Escherichia, Morganella, Klebsiella, and Pseudomonas). Since the main cause of abdominal compartment syndrome is a cluster of intestinal contents and gas. Treatment requires the elimination of intraabdominal hypertension including intestine drainage and sanitation by ultraviolet radiation against putrefactive microflora with subsequent lactobacilli colonization at lg 2-4 109 and intracolonic electrostimulation.

Overcoming these challenges, we invented novel method of treatment based on nasointestinal tube insertion for intestinal contents resulting in twice decreasing intra-abdominal pressure to 5-10 mm Hg. Due to this reason, the postoperative period was favorable.

Conclusion

Surgical patients with abdominal compartment syndrome, treatment of postoperative intestinal paresis and sanitation is acceptable to use ultraviolet and electroradiation. Treatment procedures should be performed every 6-12 hours for 2-4 days after surgery until peristalsis is restored.